Number/Computation

Concepts - Students will describe properties of, give examples of, and apply to real-world or mathematical situations:

MA-4-1.1.1 Whole numbers 0 – 100,000; use fractions to represent equal parts of a whole or a group; mixed numbers and decimals through hundredths.
MA-4-1.1.2 The operations of addition, subtraction, multiplication, and division
MA-4-1.1.3 Odd and even numbers, multiples, and factors
MA-4-1.1.4 Place value, expanded form, number magnitude to 100,000; decimals through hundredths
MA-4-1.1.5 Multiple representations of numbers (e.g., drawings, manipulative, symbols) to 10,000

Skills – Students will perform mathematical operations and procedures accurately and efficiently, explain how the skills work in real-world or mathematical situations, and are able to:

MA-4-1.2.1 Read, write, and rename whole numbers in word form, expanded form, and standard form (0-100,000)
MA-4-1.2.2 Multiply by one and two digit numbers; add/subtract 3-digit and 4-digit numbers; divide three-digit numbers by single digit divisors (with and without remainders)
MA-4-1.2.3 Add and subtract fractions with like denominators; add and subtract decimals through hundredths
MA-4-1.2.4 Skip-count forward and backward by 2's, 3's, 4's, 5's, 10's, 20's, 25's, 50's, 100's, 1,000's, 10,000's and 100,000's
MA-4-1.2.5 Apply appropriate strategies to estimate larger quantities (e.g., sampling or creating a benchmark)
MA-4-1.2.6 Estimate computational results using an appropriate strategy
MA-4-1.2.7 Determine if one number is a factor of another (e.g., Is 3 a factor of 24?)
MA-4-1.2.8 Determine multiples of a given number (e.g., list of 4 multiples of 6)
MA-4-1.2.9 Order and compare (>, <, =) whole numbers to 100,000 and fractions with reasonable differences (e.g., compare 1/3 and 1/5, or 1/4 and 5/8, or 3/5 and 2/8

Relationships - Students will make connections between concepts and skills, show how connections are made, explain why procedures work, and/or make generalizations about mathematics in meaningful ways by showing:

MA-4-1.3.1 How fractions, decimals, and whole numbers to 100,000 relate (equivalence, order)
MA-4-1.3.2 How the zero property of multiplication, commutative property of addition/multiplication, and identity property of addition and multiplication are used in computation
MA-4-1.3.3 How the base 10 number system (numbers to 100,000) relates to place value (e.g., ten tens make one hundred, ten tenths make one whole)

Geometry/Measurement

Concepts - Students will describe properties of, define, give examples of, and apply to both real-world and mathematical situations:

MA-4-2.1.1 Basic geometric elements and terms including points, rays, lines (perpendicular, parallel, intersecting), segments, sides, edges, faces, vertices and angles (acute, right, obtuse)
MA-4-2.1.2 Basic two-dimensional shapes including circles, triangles (right, equilateral), squares, rectangles, trapezoids, rhombuses, hexagons, pentagons and octagons.
MA-4-2.1.3 Basic three-dimensional shapes including spheres, cones, cylinders, pyramids, cubes, and triangular and rectangular prisms
MA-4-2.1.4 Symmetry, congruence, and similar figures
MA-4-2.1.5 Nonstandard and standard (U.S. customary, metric) units of measurement (e.g., weight-oz., lbs., tons, g, kg; length – in., ft., yd., mile, cm, m, km; area in square units); time, money, temperature (Fahrenheit, Celsius)

Skills - Students will perform mathematical operations and procedures accurately and efficiently, explain how the skills work in real-world or mathematical situations, and are able to:

MA-4-2.2.1 Sort objects and compare attributes
MA-4-2.2.2 Use symmetry to construct a geometric design
MA-4-2.2.3 Identify and draw basic two-dimensional shapes in different orientations using rotations (turns), reflections (flips), and translations (slides)
MA-4-2.2.4 Identify basic three-dimensional shapes by appearance
MA-4-2.2.5 Use nonstandard and standard units to measure weight, length, perimeter, area (rectangular shapes in square units only)
MA-4-2.2.6 Use standard units to measure money, time (elapsed), and temperature (e.g., above and below zero)
MA-4-2.2.7 Choose appropriate tools (e.g., thermometer, scales, balances, clock, meter stick, yardstick, ruler) for specific measurement tasks
MA-4-2.2.8 Identify measurable attributes of an object (length and weight) and make an estimate using appropriate units of measurement
MA-4-2.2.9 Use measurements to describe and compare attributes of objects to include length (in., ft., yd., mile, cm, m, km), width, height, money (cost), temperature and weight (oz., lb., tons, g, kg)

Relationships - Students will make connections between concepts and skills, explain how connections are made, explain why procedures work, and/or make generalizations about mathematics by showing:

MA-4-2.3..1 How two-dimensional shapes are alike or different including circles, triangles (right, equilateral), squares, rectangles, trapezoids, rhombuses, hexagons, pentagons, octagons
MA-4-2.3.2 How three-dimensional shapes are alike or different including spheres, cones, cylinders, cubes, pyramids, and triangular and rectangular prisms
MA-4-2.3.3 How units within the same measurement system (U.S. customary or metric) are related (length [in., feet, yds., miles, cm, m, km]; weight [oz., lbs., tons, g, kg])
MA-4-2.3.4 How no more than 2 lines of symmetry relate to the shape

Probability/Statistics

Concepts - Students will describe properties of, define, give examples of, and apply to both real-world and mathematical situations:

MA-4-3.1.1 Range, median and mode of a set of data
MA-4-3.1.2 Probability of an unlikely event and certain/impossible events
MA-4-3.1.3 The process of using data to answer questions (e.g., collect, organize, display and interpret data to answer questions)

Skills - Students will perform mathematical operations and procedures accurately and efficiently, explain how the skills work in real-world or mathematical situations, and are able to:

MA-4-3.2.1 Pose questions that can be answered by collecting data
MA-4-3.2.2 Collect, organize, and describe data (e.g., drawings, tables, charts)
MA-4-3.2.3 Construct/interpret displays of data (e.g., bar graph, pictograph, line plot, simple Venn diagrams, tables)
MA-4-3.2.4 Interpret circle graphs
MA-4-3.2.5 Make simple predictions (e.g., What would happen next, tomorrow, or within the next week?) and draw conclusions from data displays (e.g., bar graph, pictograph, line plot, simple Venn diagrams, tables)
MA-4-3.2.6 Find mean, median, mode, and range of a set of data
MA-4-3.2.7 Generate all possible outcomes in simple probability activities
MA-4-3.2.8 Determine the fairness of games using simple probability activities (e.g., dice, spinner activities)

Relationships - Students will make connections between concepts and skills, show how connections are made, explain why procedures work, and/or make generalizations about mathematics by showing:

MA-4-3.3.1 How data are used to draw conclusions from a single data set
MA-4-3.3.2 How simple predictions (e.g., What color ball would be drawn next?) can be based on probability data
MA-4-3.3.3 Not assessed

Algebraic Thinking

Concepts - Students will describe properties of, define, give examples of, and apply to both real-world and mathematical situations:

MA-4-4.1.1 Functions (input-output) through pictures, tables and words
MA-4-4.1.2 Number sentences with a missing value or variable in a simple mathematical expression
MA-4-4.1.3 A positive coordinate system of graphing using ordered pairs

Skills - Students will perform mathematical operations and procedures accurately and efficiently, explain how the skills work in real-world or mathematical situations, and are able to:

MA-4-4.2.1 Find rules for, extend, and create patterns (e.g., 108, 208, 308, 408; □OO△□OO△ …)
MA-4-4.2.2 Use tables to analyze patterns /functions
MA-4-4.2.3 Find solutions to number sentences with a missing value (e.g., 7 - N = 4, □ + 5 >14)
MA-4-4.2.4 Locate whole numbers, fractions (e.g., fourths, halves) on a number line
MA-4-4.2.5 Graph ordered pairs on a positive coordinate grid

Relationships - Students will make connections between concepts and skills, show how connections are made, explain why procedures work, and/or make generalizations about mathematics by showing:

MA-4-4.3.1 How simple patterns (e.g., numbers, pictures, words) are alike and different (e.g., simple patterns like △□△□△□ ; △OO△OO)
MA-4-4.3.2 How rules involving simple number patterns can be explained (e.g., simple patterns like 1, 3, 5, 7; 5, 10, 15, 20; 30, 27, 24, 21)